



Saskatchewan  
Ministry of  
Agriculture

# CROP PRODUCTION NEWS

Volume 31, No. 1

May 15, 2009

## PRODUCTION

### Editor's Comments

Ray McVicar / Faye Dokken, Crops Branch, Saskatchewan Agriculture

Welcome back to another growing season with the Crop Production News (CPN). Thank you for your positive responses to our questionnaire in the final edition of the 2008 CPN. You told us that, for the most part, we are on the right track in providing timely crop production information on issues that are occurring in the field. We will also work to include the changes and additions you suggested.

This year, editing and compiling duties for the CPN will be shared by Ray McVicar, Faye Dokken and Sean Miller at the Crops Branch. Each of the nine editions will be posted on the Saskatchewan Ministry of Agriculture website at [www.agriculture.gov.sk.ca](http://www.agriculture.gov.sk.ca) (then search for Crop Production News). Last year's 2008 Crop Production News is also archived at the same website address.

People who have requested to receive the CPN (539 subscribers by the end of 2008) will be notified by email each time a new edition has been posted on the website.

After a long, cold winter and a cool spring, the 2009 growing season is off to a slow start. For an update on provincial crop progress throughout the growing season, see the weekly Crop Report at [www.agriculture.gov.sk.ca/Crop-Report](http://www.agriculture.gov.sk.ca/Crop-Report).

The spring update to the 2009 Guide to Crop Protection is now available on our website at [www.agriculture.gov.sk.ca/Guide\\_to\\_Crop\\_Protection](http://www.agriculture.gov.sk.ca/Guide_to_Crop_Protection).

**NOTE:** Throughout this document, you will see that some publications are in blue font and underlined, indicating links to website information. If you are reading this off your computer screen, press the CTRL button and click your cursor on the link to take you directly to the website. ☺

*Crop Production News* is a biweekly publication prepared primarily by provincial specialists with the Crops Branch of the Saskatchewan Ministry of Agriculture. It is a compilation of articles related to entomology, plant pathology, weed science, soils and agronomy issues.

Please do not use any of these articles for any other purpose without first asking the author's permission.

If you wish to be added to or removed from our mailing list, forward your request by email to: [sean.miller@gov.sk.ca](mailto:sean.miller@gov.sk.ca)

## INSIDE

May 1, 2009, Stubble Subsoil Moisture Map...	2
Winter Cereal Production – Spring Considerations.....	3
Don't Skip Phosphate Starter Fertilizer.....	4
Chickpea Ascochyta Sentinel Project Underway for 2009.....	5
Adequate Phosphorus Supplies Needed for Optimum Alfalfa Yields.....	6
Flax Variety Update 2009 .....	8

# May 1, 2009, Stubble Subsoil Moisture Map

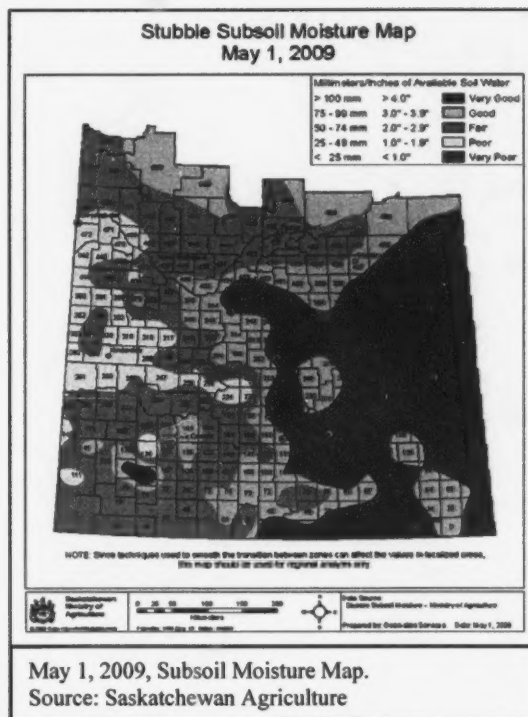
By Ken Panchuk, Provincial Specialist, Soils

The May 1, 2009, snapshot of the subsoil moisture conditions for Saskatchewan is now available. Producers and field agronomists are encouraged to continue checking subsoil moisture levels prior to seeding to make final adjustments to cropping plans and levels of inputs such as fertilizer.

Improvements in subsoil moisture from the fall are seen throughout the province, resulting from the slow snow melt and spring rains. Most of the province has ample subsoil moisture for seeding and carrying the new crop into June. The eastern half of the grain belt has Good to Very Good subsoil moisture ratings. The southwestern region has generally Fair subsoil moisture recharge, with some areas rating Poor, Good and Very Good. The north-central region has Fair to Good subsoil moisture. The west-central to northwestern regions experienced little improvement in subsoil moisture over the winter or from spring rains, with most of the region rating Poor to Fair. Rain will be needed in these regions during the seeding window to maintain good seeding conditions and to sustain the crop throughout the growing season.

Generally, there is variability in the amount of soil moisture recharge from field to field, so the May 1, 2009, map should be used for a regional snapshot only.

The May 1, 2009, Stubble Subsoil Moisture Map can be found at: <http://www.agriculture.gov.sk.ca/Production>. Follow the link to Crops – Seeding, then Stubble Subsoil Moisture Map. ☼



## Mark Your Calendar

Cereals, Oilseeds, Pulses, Crop Agronomy and Weed Control will be featured at this summer's U of S Crop Development Centre and Plant Sciences Field Day on July 21, 2009 at the Kernen Crop Research Farm near Saskatoon. More details to follow.

# Winter Cereal Production – Spring Considerations

By Blaine Recksiedler, Provincial Specialist, Cereal Crops

Producers seeded approximately 1.25 million acres of winter wheat in Western Canada in the fall of 2008. Although the western prairies experienced some very cold temperatures this past winter, and snow cover was sparse in some areas when the cold temperatures hit, it appears that winter wheat fared quite well through the winter.

## Spring Assessment is Crucial

Producers are often too hasty in deciding that slow growth in the spring indicates that the crop has suffered winter injury or didn't vernalize properly. In most instances, provided that proper agronomic practices were used, the crop's crown tissue needs only a few days of warm temperatures to resume growth. Soil temperatures above 9° C (at crown depth) rapidly accelerates plant growth and completes the de-hardening process.

To properly assess winter wheat survival in the spring, it is helpful to be aware of conditions in the fall and winter. Areas with poor emergence will be more prone to winterkill, and areas with adequate snow cover (as little as 10 cm or four inches) will be more likely to survive. Leaf colour is not always a good indication of winter survival. Early green leaves may not mean the crop has survived, while brown leaf material early in the spring may not indicate winterkill. The best indication of survival is new white root growth from the crown tissue.

Wait as long as possible for proper field assessment. If possible, wait until most of the spring seeding is completed. This will give winter wheat plants time to re-grow, while still allowing time to re-seed, if necessary.

For a more accurate indication of winter survival, remove a few plants on a warm day and place crowns on a moist paper towel in a warm room that is exposed to light for at least part of the day. Damaged crown tissue will quickly turn brown while healthy tissue will remain white and may begin to produce new roots within a few days.



Winter Wheat Seedlings  
Source: Ducks Unlimited Canada

(Continued on page 4)

## Winter Cereal Production – Spring Considerations (Continued from page 3)

Another factor to consider before terminating a winter wheat crop is the plant's ability to tiller and compensate for thin stands. The crop can still produce profitable yields, especially when compared to the costs of terminating the crop and reseeding.

### Nitrogen

Winter cereals have greater yield potential than spring cereal crops, and therefore need approximately 25 per cent more nitrogen fertilizer to realize their potential yield and quality. Because winter cereals are heavy users of nitrogen early in the season, an early application is often needed. It is a general recommendation that nitrogen be applied before seeding begins for other crops. Ideally, it should be applied as soon as the snow melts and the field can support fertilizing equipment. Cereal crops use 70 per cent of their nitrogen by the late tillering stage, and it has been shown that a three-week delay in nitrogen application could result in a 30-per-cent yield penalty.

Even with the late start to spring in many areas this year, it is most likely already too late to receive the full benefit of nitrogen fertilizer applied after May 15.

### Weed Control

Winter annuals can rob the winter wheat crop of precious spring moisture and nutrients. Timing is important – don't let winter annuals get too big while waiting for the spring annual weeds to emerge. ☼

## Don't Skip Phosphate Starter Fertilizer

By Ken Panchuk, Provincial Specialist, Soils

Crops require adequate levels of phosphate during early growth. Phosphate has a major positive impact on early root growth, especially under cool soil conditions. The second major positive impact of phosphate occurs at the tillering stage of cereal grains, when phosphate increases tiller initiation. Phosphate also plays an important role in N-fixation of pulse crops. Starter phosphate needs to be banded with or near the seed for optimal early uptake.

Mono-ammonium phosphate is the preferred form of phosphate for western Canadian needs, providing some nitrogen as well as the early phosphate required by the crop.



Left has 10 lb. starter phosphate placed with the seed. Right has no starter phosphate (notice the spindly plants.). Nitrogen requirement was side-banded.

Source: International Plant Nutrition Institute

(Continued on page 5)



### **Don't Skip Phosphate Starter Fertilizer** (Continued from page 4)

Follow the safe rates of phosphate applied with the seed because some crops, like field pea and flax, are sensitive to high rates of seed-placed phosphate.

JumpStart, a phosphorus solubilizing inoculant, is active under cool soils, making phosphorus available during early crop growth.

Other macronutrients that are determined to be deficient by a soil test also need to be added in the correct amounts to form a balance of nutrients for optimal crop health and productivity.

For more information on starter phosphate fertilizer, refer to *Phosphorous Fertilization in Crop Production* and *Guidelines for Safe Rates of Fertilizer Applied with the Seed* on the Saskatchewan Agriculture website.✿

## **Chickpea Ascochyta Sentinel Project Underway for 2009**

**By Faye Dokken, Provincial Specialist, Plant Disease,  
Dale Risula, Provincial Specialist, Special Crops,  
and  
Shannon Chant, Regional Crops Specialist**

This year marks the third and final season of the Chickpea Ascochyta Sentinel Project. This project has been designed to develop an early warning system for ascochyta of chickpea to aid in timing the first and highly critical fungicide application. The objective is to determine the first release of *Ascochyta rabiei* spores by placing pre-grown, susceptible chickpea plants near inoculum sources in chickpea residue. These sentinel plants are then returned to the lab to promote symptom development and determine disease risk. For 2009, sentinel sites have been set up at Swift Current and Stewart Valley, while volunteer agronomists and growers from around the province will be participating in the project as co-operators.

Reports will be sent to volunteer agronomists and grower co-operators twice a week for the duration of the project. If you're interested in participating in the project as an agronomist or grower co-operator, contact Faye Dokken at [faye.dokken@gov.sk.ca](mailto:faye.dokken@gov.sk.ca) or phone (306) 787-4671.

Agronomist and grower co-operators will be expected to:

- Check their e-mail/fax twice a week for updates on ascochyta disease status;
- Attend a mid-summer field day to view the program; and
- Agree to be interviewed so that we can assess if the program was instrumental in determining your fungicide application timing or amounts.✿

# Adequate Phosphorus Supplies Needed for Optimum Alfalfa Yields

By Michel Tremblay, Provincial Specialist, Forage Crops

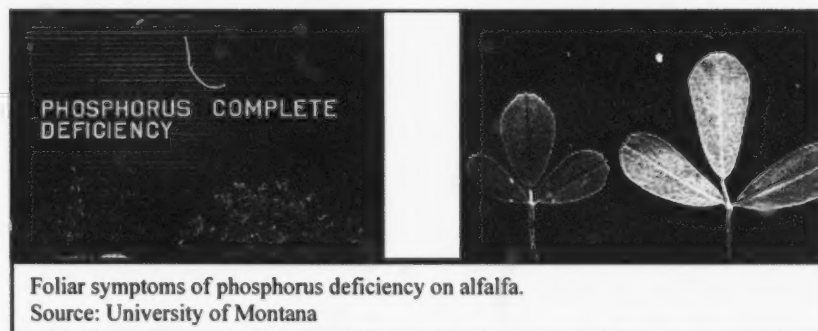
Alfalfa is an important forage species in Saskatchewan and is grown alone or in mixtures on most of the approximately 7.5 million acres of seeded forage in Saskatchewan.

Alfalfa is a big user of phosphorus, removing approximately 12 to 15 pounds of phosphorus from the soil for every ton of forage produced. Inadequate phosphorus supplies result in less nitrogen fixation, which leads to lower yields and reduced quality.

Phosphorus is a contributor to many plant functions, including cell division, fat formation, seed formation, crop maturation, lateral and fibrous rootlet development, forage quality and disease resistance. It is also essential for the formation of efficient energy transfer mechanisms in plants, specifically as a component of adenosine triphosphate (ATP). ATP stores energy during the light phase of photosynthesis. Specifically in legumes, phosphorus is required for nitrogenase activity. Nitrogenase is one of the enzymes required for nitrogen fixation in alfalfa. Adequate levels of phosphorus must be available to alfalfa to ensure efficient nitrogen fixation and to avoid nitrogen deficiency. Phosphorus also influences the utilization of potassium in plants. A shortage of phosphorus can limit potassium uptake in alfalfa, resulting in effects such as reduced winter hardiness.

Phosphorus deficiency in alfalfa can result in visual symptoms. Phosphorus deficient plants are stunted and unthrifty. Leaves and stems may develop a purple or dark green colour as the severity of the deficiency increases.

Leaves are smaller than unaffected plants. Root development is impeded and they have a light brown colour. Growth is abnormally stiff and upright. Maturity may be delayed, while yellowing and death of older leaves occurs with severe deficiency. Cold soil temperatures at the beginning of the growing season can result in reduced phosphorus availability and the temporary expression of phosphorus deficiency.



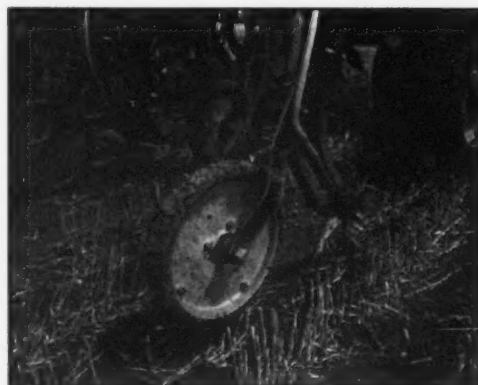
Phosphorus and other macronutrients can be deficient in many Saskatchewan fields. Soil-test prior to seeding to determine phosphorus, potassium and sulphur levels, and

(Continued on page 7)

## Adequate Phosphorus Supplies Needed for Optimum Alfalfa Yields (Continued from page 6)

correct any deficiencies with the proper balance of nutrients for each field. Phosphorus is relatively immobile in soils, and surface-applied phosphorus is considerably less efficient than phosphorus placed in the soil. Several years' supply of phosphorus should be surface-applied and incorporated or banded prior to seeding an alfalfa crop.

In established fields, phosphorus can be disc-banded or liquid fertilizer can be dribble-banded along with other nutrients needed to correct deficiencies. However, top-dressing granular phosphorus will require two or three times the rate of banded phosphorus to achieve a similar yield response.



Banding phosphorus.  
Source: Saskatchewan Ministry of Agriculture

Phosphorus is a crucial nutrient for alfalfa growth and development, so phosphorus fertilizer is required on most alfalfa stands to maintain long-term yield and vigour. ⚙

## Flax Variety Update 2009

By Venkata Vakulabharanam, Provincial Specialist, Oilseed Crops

Variety selection is an important step in achieving target yields and profitability in flax production. New varieties are registered every year, while some varieties may be de-registered. For example a new flax line – FP2242 – was recommended for registration in February 2009. This line was developed by Dr. Gordon Rowland's flax breeding program at the Crop Development Centre, and will be made available for the 2012 crop season. The following list includes the predominant flax varieties grown and marketed in Saskatchewan (as published in *Varieties of Grain Crops* on the Saskatchewan Agriculture website).

### Predominant flax varieties grown and marketed in Saskatchewan

Variety	Year Registered	Maturity	Lodging	Seed Size/Disease Rating
CDC Bethune	1998	Late*	Good	Medium seed size, Fair for powdery mildew and Fusarium wilt

(Continued on page 9)

**Flax Variety Update 2009**  
(Continued from page 8)

CDC Arras	1998	Medium	Fair	Large seed size, Poor for powdery mildew and Fair for Fusarium wilt.
Hanley	2001	Medium	Good	Medium seed size, Fair for powdery mildew and Good for Fusarium wilt
Lightning	2001	Late	Good	Medium seed size, Fair for powdery mildew and Good for Fusarium wilt
Macbeth	2002	Late	Good	Medium seed size, Fair for powdery mildew and Good for Fusarium wilt
CDC Mons	2002	Late	Good	Small seed size, Fair for powdery mildew and Fusarium wilt
CDC Normandy	1995	Medium	Fair	Medium seed size, Poor for powdery mildew and Fair for Fusarium wilt
Prairie Blue	2003	Late	Very Good	Small seed size, Fair for powdery mildew and Fusarium wilt
Prairie Grande**	2007	Medium	Very Good	Medium seed size, Fair for powdery mildew and Fusarium wilt
Prairie Thunder	2006	Medium	Very Good	Medium seed size, Fair for powdery mildew and Good for Fusarium wilt
CDC Sorrel	2005	Late	Good	Large seed size, Fair for powdery mildew and Fusarium wilt
Taurus	1999	Medium	Good	Medium seed size, Fair for powdery mildew and Fusarium wilt
Vimy	1986	Medium	Poor	Large seed size, Poor for powdery mildew and Fair for Fusarium wilt
AC Watson	1996	Medium	Good	Medium seed size, Fair for powdery mildew and Fusarium wilt

\*Average of 101 days from seeding to swathing ripeness.

\*\* Prairie Grande seed will not be available for 2009. ⚙

The *Crop Production News* is a publication of the  
Crops Branch, Saskatchewan Ministry of Agriculture.

Editors: Ray McVicar and Faye Dokken;

Phone: (306) 787-8733 and (306) 787-4671;

e-mail: [ray.mcvicar@gov.sk.ca](mailto:ray.mcvicar@gov.sk.ca) and [faye.dokken@gov.sk.ca](mailto:faye.dokken@gov.sk.ca)